Amendments to the Claims

Please add new claims 52-61 as shown in the detailed list of all claims under examination set out below:

1. (original): A process for dry converting a moving substrate of indefinite length comprising conveying the substrate through a dry converting station in a close enclosure while supplying the enclosure with one or more streams of conditioned gas flowing at a rate sufficient to reduce materially the particle count in the close enclosure.

2. (original): A process according to claim 1 comprising conveying the substrate through a series of interconnected close enclosures.

3. (original): A process according to claim 1 comprising conveying the substrate in a close enclosure or series of close enclosures through at least a first dry converting station in the process.

4. (original): A process according to claim 1 comprising conveying the substrate in a close enclosure or series of close enclosures through at least a last dry converting station in the process.

5. (original): A process according to claim 1 comprising conveying the substrate in a close enclosure or series of close enclosures from at least a first dry converting station in the process through at least a last dry converting station in the process.

6. (original): A process according to claim 1 comprising conveying the substrate in a close enclosure or series of close enclosures from at least a first dry converting station in the process up to a takeup reel or up to or through a packaging station.

7. (original): A process according to claim 1 comprising conveying the substrate in a close enclosure or series of close enclosures from a cabinet containing an unwind reel to a cabinet containing a takeup reel.

8. (original): A process according to claim 1 wherein at least two close enclosures have different pressures, temperatures, average headspaces or average footspaces.

9. (original): A process according to claim 1 comprising maintaining or establishing a positive pressure in at least one close enclosure and maintaining or establishing a negative pressure in at least one other close enclosure.

10. (original): A process according to claim 1 comprising supplying a conditioned gas stream to at least the first in a series of interconnected close enclosures whereby the conditioned gas is carried along with the moving substrate to a downstream close enclosure or pushed to an upstream enclosure or process.

11. (original): A process according to claim 1 comprising supplying conditioned gas streams to a plurality of close enclosures and withdrawing gas from a plurality of close enclosures.

12. (original): A process according to claim 1 comprising supplying conditioned gas streams to each in a series of interconnected close enclosures.

13. (original): A process according to claim 1 comprising sealing the moving substrate at the upstream and downstream ends of a series of interconnected close enclosures.

14. (original): A process according to claim 1 comprising maintaining a pressure gradient of at least about -0.5 Pa or higher in a close enclosure.

15. (original): A process according to claim 1 comprising maintaining a positive pressure gradient in a close enclosure.

16. (original): A process according to claim 1 comprising connecting first and second enclosures having a material difference in their respective operating pressures via a close enclosure comprising a transition zone.

17. (original): A process according to claim 16 wherein there is a ten-fold or greater pressure difference between atmospheres in the first and second enclosures.

18. (original): A process according to claim 1 wherein the total of the average headspace and average footspace in a close enclosure is 10 cm or less.

19. (original): A process according to claim 1 wherein the total of the average headspace and average footspace in a close enclosure is 5 cm or less.

20. (original): A process according to claim 1 wherein the total of the average headspace and average footspace in any close enclosure is 3 cm or less.

21. (original): A process according to claim 1 wherein a first chamber having a gas introduction device is positioned near a control surface, a second chamber having a gas withdrawal device is positioned near the control surface, the control surface and first and second chambers together define a region wherein adjacent gas phases possess an amount of mass, at least a portion of the mass from the adjacent gas phases is transported through the gas withdrawal device by inducing a flow through the region, and the mass flow can be segmented into the following components:

M1 means total net time-average mass flow per unit of substrate width into or out of the region resulting from pressure gradients,

M1' means the total net time-average mass flow of a gas per unit width into the region through the first chamber from the gas introduction device,

M2 means the time-average mass flow of conditioned gas per unit width from or into the at least one major surface of the substrate into or from the region,

M3 means total net time-average mass flow per unit width into the region resulting from motion of the material, and

M4 means time-average rate of mass transport through the gas withdrawal device per unit width.

22. (original): A process according to claim 21 wherein M1 has a value less than zero and greater than -0.25 kg/second/meter.

23. (original): A process according to claim 21 wherein M1 has a value less than zero and greater than -0.10 kg/second/meter.

24. (original): A process according to claim 1 comprising flowing a stream of conditioned gas at a rate sufficient to reduce a close enclosure particle count by 75% or more.

25. (original): A process according to claim 1 comprising flowing streams of conditioned gas at a rate sufficient to reduce the close enclosure particle counts by 90% or more.

26. (original): An apparatus for converting a moving substrate of indefinite length comprising a dry converting station and substrate-handling equipment for conveying the substrate through the dry converting station, the substrate being enveloped in the dry converting station by a close enclosure supplied with one or more streams of conditioned gas flowing at a rate sufficient to reduce materially the particle count in the close enclosure.

27. (original): An apparatus according to claim 26 wherein the substrate is conveyed through a series of interconnected close enclosures.

28. (original): An apparatus according to claim 26 wherein the substrate is enveloped by a close enclosure or series of close enclosures through at least a first dry converting station in the apparatus.

29. (original): An apparatus according to claim 26 wherein the substrate is enveloped by a close enclosure or series of close enclosures through at least a last dry converting station in the apparatus.

30. (original): An apparatus according to claim 26 wherein the substrate is enveloped by a close enclosure or series of close enclosures from at least a first dry converting station in the apparatus through at least a last dry converting station in the apparatus.

31. (original): An apparatus according to claim 26 wherein the substrate is enveloped in a close enclosure or series of close enclosures from at least a first dry converting station in the apparatus up to a takeup reel or up to or through a packaging station.

32. (original): An apparatus according to claim 26 wherein the substrate is enveloped in a close enclosure or series of close enclosures from a cabinet containing an unwind reel to a cabinet containing a takeup reel.

33. (original): An apparatus according to claim 26 wherein at least two close enclosures have different average headspaces or average footspaces.

34. (original): An apparatus according to claim 26 wherein a conditioned gas stream is supplied to at least the first in a series of interconnected close enclosures and the conditioned gas is carried along with the moving substrate to a downstream close enclosure or pushed to an upstream enclosure or process.

35. (original): An apparatus according to claim 26 wherein conditioned gas streams are supplied to a plurality of close enclosures and gas streams are withdrawn from a plurality of close enclosures.

36. (original): An apparatus according to claim 26 wherein conditioned gas streams are supplied to each in a series of interconnected close enclosures.

37. (original): An apparatus according to claim 26 having seals with respect to the moving substrate at the upstream and downstream ends of a series of interconnected close enclosures.

38. (original): An apparatus according to claim 26 wherein a close enclosure has a pressure gradient of at least about -0.5 Pa or higher.

39. (original): An apparatus according to claim 26 wherein a close enclosure has a positive pressure gradient.

40. (original): An apparatus according to claim 26 comprising first and second enclosures having a material difference in their respective operating pressures connected by a close enclosure comprising a transition zone between the first and second enclosures.

41. (original): An apparatus according to claim 42 wherein there is a ten-fold or greater pressure difference between atmospheres in the first and second enclosures.

42. (original): An apparatus according to claim 26 wherein the total of the average headspace and average footspace in a close enclosure is 10 cm or less.

43. (original): An apparatus according to claim 26 wherein the total of the average headspace and average footspace in a close enclosure is 5 cm or less.

44. (original): An apparatus according to claim 26 wherein the total of the average headspace and average footspace in any close enclosure is 3 cm or less.

45. (original): An apparatus according to claim 26 wherein a first chamber having a gas introduction device is positioned near a control surface, a second chamber having a gas withdrawal device is positioned near the control surface, the control surface and first and second chambers together define a region wherein adjacent gas phases possess an amount of mass, at least a portion of the mass from the adjacent gas phases can be transported through the gas withdrawal device by inducing a flow through the region, and the mass flow can be segmented into the following components:

M1 means total net time-average mass flow per unit of substrate width into or out of the region resulting from pressure gradients,

M1' means the total net time-average mass flow of a gas per unit width into the region through the first chamber from the gas introduction device,

M2 means the time-average mass flow of conditioned gas per unit width from or into the at least one major surface of the substrate into or from the region,

M3 means total net time-average mass flow per unit width into the region resulting from motion of the material, and

M4 means time-average rate of mass transport through the gas withdrawal device per unit width.

46. (original): An apparatus according to claim 45 wherein M1 has a value less than zero and greater than -0.25 kg/second/meter.

47. (original): An apparatus according to claim 45 wherein M1 has a value less than zero and greater than -0.10 kg/second/meter.

48. (original): An apparatus according to claim 26 wherein a stream of conditioned gas flows at a rate sufficient to reduce a close enclosure particle count by 75% or more.

49. (original): An apparatus according to claim 26 wherein the streams of conditioned gas flow at a rate sufficient to reduce the close enclosure particle counts by 90% or more.

50. (original): A process for dry converting a moving substrate of indefinite length comprising conveying the substrate through a dry converting station in a close enclosure while supplying the enclosure with one or more streams of conditioned gas flowing at a rate sufficient to cause a material change in a physical property of interest for the atmosphere in the close enclosure.

51. (original): An apparatus for converting a moving substrate of indefinite length comprising a dry converting station and substrate-handling equipment for conveying the substrate through the dry converting station, the substrate being enveloped in the dry converting station by a close enclosure supplied with one or more streams of conditioned gas flowing at a rate sufficient to cause a material change in a physical property of interest for the atmosphere in the close enclosure.

52. (new): An apparatus according to claim 51 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 10 cm or less.

53. (new): A process according to claim 50 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 10 cm or less.

54. (new): An apparatus according to claim 49 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 10 cm or less.

55. (new): An apparatus according to claim 49 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 3 cm or less.

56. (new): An apparatus according to claim 49 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 2 cm or less.

57. (new): An apparatus according to claim 49 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 1.5 cm or less.

58. (new): A process according to claim 25 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 10 cm or less.

59. (new): A process according to claim 25 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 3 cm or less.

60. (new): A process according to claim 25 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 2 cm or less.

61. (new): A process according to claim 25 wherein the total of the average headspace and average footspace in a close-coupled enclosure is 1.5 cm or less.